

### **Remarks**

This Amendment is submitted in response to the office action mailed March 18, 2008, in connection with the above-identified application (hereinafter, the "Office Action"). The Office Action provided a three-month shortened statutory period in which to respond, ending on June 18, 2008. Submitted herewith is a Petition for a Three-Month Extension of Time extending the due date to September 18, 2008, a Request for Continued Examination Transmittal Form, and a Supplemental Invention Disclosure Statement. Accordingly, this Amendment is timely submitted.

Claims 1 through 18 are currently pending. Applicants respectfully request the entry of the amendments to Claim 1. Applicants respectfully submit that the amendments to the pending claims do not introduce any new matter.

### **Rejection under 35 U.S.C. § 112**

Claims 1 through 18 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description and enablement requirements. The Examiner asserted that the phrase "volatizing the volatile components of the sample" in Claim 1, as amended, is new matter because it was not described in the specification or original claims as part of the sample preparation.

Applicants have amended Claim 1 to clarify that the samples are prepared using ionic liquids and then the volatile components of the sample are volatized by headspace gas chromatography. Support for such an amendment can be found in the original claims and examples in which samples are dissolved in at least one ionic liquid and then analyzed by headspace gas chromatography.

Applicants respectfully submit that Claims 2 through 18 are in condition for allowance as they depend from an allowable independent claim.

In view of the foregoing amendment, Applicants respectfully submit that the Claims 1 to 18 of the present application properly comply with the written description and enablement requirements of 35 U.S.C. § 112, first paragraph. Applicants request that Claims 1 to 18 of the present application be reconsidered for allowance and the Examiner's rejection be withdrawn.

### **Rejection under 35 U.S.C. § 103**

Claims 1 through 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Armstrong et al., "Examination of ionic liquids and their interactions with molecules, when used

as stationary phases in gas chromatography”, Anal. Chem. 1999, 71, 3873-3876 (“Armstrong”) in view of JP-4216052 (“Japanese Abstract”); Nagai Yumi, Science Links Japan: Analysis of Residual solvents in pharmaceuticals by headspace gas chromatography, Shimadzu review (2002) (“Yumi”); Kumar et al., “Headspace gas chromatography method for the analysis of volatile impurities in hormone replacement trans-dermal patch”, J. Chromatography A, 1999, 859, 113-118 (“Kumar”); and Russo, “Static headspace gas chromatography of residual solvents in pharmaceutical products”, Chromatographia, 39(11/12), 1994 (“Russo”).

Applicants respectfully traverse the Examiner’s rejection of claims 19-23 of the present application under 35 U.S.C. §103. Applicants had requested the cancellation of claims 19 to 23 without prejudice in the prior Amendment of February 21, 2008. While properly noting that only Claims 1 to 18 are pending, the Examiner stated in the Office Action that Claims 19 to 23 are rejected under 35 U.S.C. 103(a). Accordingly, Applicants request the Examiner to enter the cancellation of Claims 19 to 23 without prejudice and withdraw the present rejection.

As explained previously, an analytical process such as gas chromatography may include several different process steps, for example, sampling, sample preparation, separation and detection. The present invention focuses on the sample preparation step in which the sample or compound to be analyzed is, e.g., dissolved in the ionic liquid prior. Only after this initial sample preparation step is the sample then separated via the chromatography. None of the cited references teach or suggest this initial preparation step.

Applicants respectfully submit that amended Claim 1 is patentable over Armstrong in view of the JP Abstract. One of the elements to establish a prima facie case of obviousness is that the combined references teach or suggest every claim limitation. As the Examiner acknowledged, Armstrong fails to teach or suggest preparing samples using the ionic liquids for analysis by headspace gas chromatography as claimed in the present invention. Likewise, the JP Abstract also fails to teach or suggest the use of ionic liquids, i.e., molten salts, in sample preparation.

Furthermore, Applicants respectfully submit that amended Claim 1 is patentable over Armstrong in view of the Yumi article. One of the elements to establish a prima facie case of obviousness is that the combined references teach or suggest every claim limitation. Armstrong fails to teach or suggest the use of ionic liquids in sample preparation prior to headspace gas chromatography. Focusing on the study of the resolution of Class 1 and Class 2 solvents, the Yumi article similarly fails to teach or suggest the use ionic liquids, i.e., molten salts, to dissolve or disperse a sample for analysis by gas chromatography.

Furthermore, Applicants respectfully submit that amended Claim 1 is patentable over Armstrong in view of the Kumar article. One of the elements to establish a prima facie case of

obviousness is that the combined references teach or suggest every claim limitation. Armstrong fails to teach or suggest the use of ionic liquids in sample preparation prior to gas chromatography. Focusing on the use of solvents to extract sample material from a patch, Kumar similarly fails to teach or suggest the use ionic liquids, i.e., molten salts, to dissolve or disperse a sample for analysis by headspace gas chromatography.

Furthermore, Applicants respectfully submit that amended Claim 1 is patentable over Armstrong in view of the Russo article. One of the elements to establish a prima facie case of obviousness is that the combined references teach or suggest every claim limitation. Armstrong fails to teach or suggest the use of ionic liquids in sample preparation prior to gas chromatography. Likewise, the Russo article also fails to teach or suggest the use of ionic liquids, i.e., molten salts, in sample preparation.

In addition, Applicants submit that the cited references and the art do not offer any teaching or suggestion for one of ordinary skill to modify and combine these references to arrive at the present invention. Armstrong does not use ionic liquids in a sample preparation step but rather as part of the stationary phase, i.e., as a coating on the inner surface of the fused silica capillaries, during the separation step. The present invention and Armstrong are using ionic liquids for different purposes and at different times during the analytical process. Contrary to the Examiner's assertion, the cited references and the art do not teach or suggest the use of ionic liquids, i.e., molten salts, to prepare samples for analysis by headspace gas chromatography as claimed in the present invention.

Applicants respectfully submit that Claims 2 through 18 are in condition for allowance as they depend from an allowable independent base claim.

Thus, in view of the foregoing arguments, Applicants respectfully request that the claims of the present application be reconsidered. If a telephone interview would be of assistance in advancing the prosecution of this application, Applicants' undersigned attorney invites the Examiner to telephone him at the telephone number provided below.

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Date: September 11, 2008